CLAIM AMENDMENTS:

1. (Currently amended) Bone formation agent of porous pure-phase calcium phosphate having an isotropic sintered structure and, between the sintered particles of the calcium phosphate, statistically distributed pores in a plurality of discrete size ranges, characterised in that it has a porosity composed of at least ~~two discrete pore size distributions (I) and (II)~~ three discrete ranges of pore sizes (I) to (III), which are statistically distributed in terms of their size, and the maxima of the three discrete pore size distributions are at pore diameters in the ranges from 0.5 to 10 μm (I), 10 to 100 μm (II) and 100 to 5000 μm (III), the porosity has an irregular geometric shape, the sintered particles of the calcium phosphate have a particle size smaller than 63 μm with a d50 value in the range from 5 to 20 μm, the interconnecting pore share in the porosity is limited to pore sizes less than 10 μm.

Claims 2-3 (Cancelled)

4. (Currently amended) Bone formation agent according to claim [[3]] 1, characterised in that the volume shares of the discrete pore size distributions (I) to (III) are in the range from 20 to 40 % by volume for pore size distribution (I), in the range from 5 to 40 % by volume for pore size distribution (II) and in the range from 1 to 40 % by volume for pore size distribution (III), the overall porosity not exceeding a figure of 85 % by volume.

5. (Previously presented) Bone formation agent according to claim 1 characterised in that the calcium phosphate consists to a substantial extent of at least 95 %, of alpha-tricalcium phosphate, beta-tricalcium phosphate, octacalcium phosphate, alkali metal-modified and/or

alkaline earth metal-modified tricalcium phosphate, calcium diphosphate, carbonate apatite of type B, calcium-deficient hydroxyapatite or mixtures thereof.

6. (Previously presented) Bone formation agent according to claim 1, characterised in that the calcium phosphate consists preferably of beta-tricalcium phosphate having a phase purity of ≥ 99 % by weight, relative to the foreign hydroxyapatite phase.

7. (Previously presented) Bone formation agent according to claim 1, characterised in that it is in the form of a granulate and is present in various granulate fractions in a size range between 50 and 10000 μm.

8. (Original) Bone formation agent according to claim 7, characterised in that the granulate has a substantially non-uniform geometric shape.

9. (Original) Bone formation agent according to claim 7, characterised in that the granulate has a substantially uniform geometric shape.

10. (Original) Bone formation agent according to claim 9, characterised in that the granulate has a substantially spherical shape.

11. (Previously presented) Bone formation agent according to claim 3, characterised in that the maxima of the discrete pore size distributions (II) or (III) are matched to the granulate size.

12. (Previously presented) Bone formation agent according to claim 11, characterised in that the maxima of the discrete pore size distributions (II) or (III) are less than half the average granulate size of a granulate fraction and are in a range between 10 and 50 % of the average granulate size of a granulate fraction.

13. (Original) Bone formation agent according to claim 1, characterised in that it is in the form of a shaped body having a defined geometric design.

14. (Original) Bone formation agent according to claim 13, characterised in that in addition to a statistical porosity it has a defined porosity in the form of tubular pores.

15. (Previously presented) Bone formation agent according to claim 14, characterised in that the defined tubular porosity is formed by one-, two- or three-dimensional bores, introduced by machining, in the diameter range from 0.5 to 2 mm, and the overall porosity consisting of statistical and tubular porosity does not exceed a value of 85 % by volume.

16. (Previously presented) Bone formation agent according to claim 3, characterised in that the bone formation agent is a compact shaped body having a pore size distribution graduated in size and volume share from the periphery to the core, with the peripheral zone pore size distributions (I) and/or (II) being present with an overall porosity of up to 35 % by volume and in the core zone pore size distributions (I) and/or (II) and/or (III) being present up to an overall porosity of 85 % by volume, with the peripheral zone having a range from 10 % to 40 % and the

core zone from 60 % to 90 % of the largest dimension of the implant perpendicular to the tensile stress direction or parallel to the bending stress.

17. (Previously presented) Bone formation agent according to claim 1, characterised in that it has, on its surface and/or in its internal pore structure, antibacterial, wound healing-promoting, bone growth-promoting and/or anticoagulant substances in suitable effective concentrations.

18. (Previously presented) Bone formation agent according to claim 13, characterised in that it has a shape individually made for a particular patient.

19. (Previously presented) Bone formation agent according to claim 13, characterised in that it is present in standardised dimensions and shapes, preferably in the form of a cube, cuboid, cylinder or wedge.

20. (Previously presented) Bone formation agent according to claim 13, characterised in that it has an indication-related shape in the form of a trepanation closure, alveolar augmentation or filler for cages for vertebrae replacement.

Claims 21-32 (Cancelled)